

STEREO MOC Status Report  
Time Period: 2019:357 - 2019:363

STEREO Ahead (STA) Status:

1. The following Ground System anomalies/events occurred during this reporting period:

- On day 358, during the DSS-34 support, turbo decoder lock was lost intermittently from 0406z through 0851z. This anomaly resulted in the loss of 36 frames of SSR data.
- On day 359, during the DSS-63 support, the station lost link connection from 1457z through 1506z, resulting in the 2-way downlink acquisition being nine minutes late. This anomaly resulted in loss of real-time telemetry between 1457z and 1506z, including the loss of six minutes of SSR data. See DR #M111949 for more information.
- On day 360, during the DSS-34 support, turbo decoder lock was lost intermittently from 0851z through 1028z. This anomaly resulted in the loss of 12 frames of SSR data.
- On day 361, during the DSS-14 support, the station lost link connection from 0111z through 0120z, resulting in the 2-way downlink acquisition being nine minutes late. This anomaly resulted in loss of real-time telemetry between 0111z and 0120z, including the loss of six minutes of SSR data. See DR #G120780 for more information.
- On day 363, during the DSS-14 support, monitor data stopped updating between 0111z and 0145z, due to a link connection problem. This anomaly had no operational impact. See DR# G120787 for more information.

2. The following spacecraft/instrument events occurred during this week. The Ahead observatory operated nominally during this week.

- On day 358 (Dec 24), The PLASTIC team continued to monitor the Post Acceleration (PAC) Power Supply temperatures and currents as they reconfigured the instrument to recovery from the HV anomaly. They began to gradually ramp up the high voltages.
- On day 358, the SECCHI instrument reset at 12:18:11z. The SECCHI team reconfigured the instrument to operational mode by 359-0150z. This was the 58th reset of the SECCHI

instrument on the Ahead observatory.

- On day 363 (Dec 29), the PLASTIC team commanded through different one hour diagnostic modes. The current working hypothesis, for which they are running diagnostic time-tag commands to confirm or not, is that PLASTIC was struck by a dust impact, and a remnant of this dust particle made it to entrance plane of the carbon foil. The carbon foil entrance plane is held at the PAC voltage. In this (hypothetical) scenario, when the PAC HV is on, the high voltage potential is ionizing volatiles from the remnant. This increases the load on the PAC power supply, and hence the increase in PAC current draw. The higher the PAC voltage, the higher the ionization, and the higher the current. This also causes high rates being measured by the instrument detectors. The good news is that the rates (and PAC current) appear to decline (very) slowly over time, which they interpret as the volatiles dissipating at a given PAC voltage value. All other power supplies (MCP, SSD, SCH, ESA, DEFL1 and DEFL2) have been engaged at full operational settings with no issues. The PLASTIC team anticipate several more days before returning to a science operational state.
- The average daily science data return for Ahead was 6.2 Gbits during this week.